

C L A I M S

5 1. A communications protocol for a  
communications bus wherein messages are transmitted to a  
plurality of devices communicating by means of a bus wherein  
each message includes a unique code indicating the end of the  
message and wherein that same unique code triggers a transfer  
of communications control to another device of the plurality of  
10 devices.

15 2. The protocol of claim 1 wherein the  
transmitted messages are in first, second, and third formats,  
each of the first, second, and third formats having a  
distinguishable length.

20 3. The protocol of claim 2 wherein the first  
message format comprises only the unique code, and indicates to  
the plurality of devices that communications control should be  
transferred to the next of the plurality of devices in a  
predetermined sequence.

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4. The protocol of claim 3 wherein the second message format comprises a sequence identifier and the unique code, and indicates to the plurality of devices that communications control should be transferred to a device of the plurality of devices which is identified by the sequence identifier.

5. The protocol of claim 4 wherein the third message format comprises a sequence identifier, data, and the unique code.

6. The protocol of claim 5 wherein the unique code is a single byte, eight bits, a SYNC byte, or two or more preselected bytes.

7. The protocol of claim 6 wherein the two or more preselected bytes are used in combination to form the unique code.

8. The protocol of claim 6 wherein any one of the two or more preselected bytes comprises the unique code.

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9. The protocol of claim 6 wherein the bus is a flat ribbon cable.

5 10. The protocol of claim 1 wherein communications control between the plurality of device is a hybrid of peer-to-peer and master/slave protocols.

10 11. A device communications comprising:  
a plurality of communicating devices;  
a communications media communicably  
connecting the plurality of devices;  
a sequential identifier for each of the  
15 plurality of devices, the identifier providing a unique  
identity for each device and providing a sequence order for all  
of the plurality of devices;  
a unique code; and  
a protocol wherein each device transmits the  
20 unique code on the communications media in the sequence order  
if the device has nothing to report, transmits the sequence  
identifier of another device followed by data followed by the  
unique code if the device has information to report, and  
transmits the sequential identifier of another device followed  
25 by the unique code if the transmitting device desires to change  
out of sequence to a different device in the sequence order.

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12. The device communications of claim 11 wherein the unique code is a single byte, eight bits, or a sync byte.

5 13. The device communications of claim 11 wherein every device receiving a message determines if the unique code is the entire message.

10 14. The device communications of claim 13 wherein if the entire message is the unique code, the device increments a sequence counter to identify the next device in the sequence order.

15 15. The device communications of claim 14 wherein the type of message is at least partially identified by the length of the message.

20 16. A method of communications for a communications bus communicably connecting a plurality of communications devices, the method comprising the steps of:  
25 assigning an identifier and a sequence order to each of the multiplicity of devices;  
transmitting, continuously and in sequence order, a message on the bus from each of the multiplicity of devices;

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terminating each message with a unique code;  
wherein the message comprises the unique code  
alone if the device has no other message to transmit;

wherein the message comprises the identifier  
5 for another device and the unique code if the transmitting  
device desires to move elsewhere in the sequence order; and  
wherein the message comprises the identifier  
for another device, data and the unique code if the  
transmitting device has a report to make.

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17. The method of claim 16 wherein the unique  
code is a single byte, eight bits, a sync bit, or two or more  
preselected bytes.

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18. The method of claim 17 wherein the two or  
more preselected bytes are used separately.

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19. A method of communicating between a plurality  
of devices communicably connected by a communications medium,  
the method comprising the steps of:

sequencing the plurality of devices into a  
25 sequence order;

transmitting a message on the communications  
medium from one of the plurality of devices having  
communications control over the communications medium;

receiving the message from the communications  
30 medium at each of the plurality of devices;

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determining, at each of the plurality of devices, if the message is: a unique code, or a combination of a sequence identifier and a unique code;

5           incrementing communications control to the next device of the plurality of devices in the sequence order if the message is the unique code; and

10           transferring communications control to a device identified in the sequence identifier if the message is a combination of the sequence identifier and the unique code.

20.   The method of claim 19 wherein the determining step further determines if the message is a combination of data and the unique code and the incrementing  
15   step also increments or transfers communications control if the message is the combination of data and the unique code.

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